CLAIMS:

1.   A method of decentralized medium access control in a communications
network consisting of a plurality of stations, wherein - a sending station transmits a
reservation request for a future transmission to an intended receiving station, said
intended receiving station being in a reception range of said sending station, said
5   reservation request signalling reservation information including starting point and
duration of the transmission, defining a time period of said future transmission, and, in
case of a multi-channel system, frequency or code of the channel of said future
transmission, so establishing a reservation, and - stations active in said reception range
overhear said reservation request and other stations than said intended receiving station
10   perform the actions of storing said reservation information locally and defer from
medium access during the time period and on the channel of the future transmission.

2.   The method of claim 1, wherein - said intended receiving station
acknowledges said reservation request by returning a message repeating said reservation
15   information; and - other stations than the intended receiving station active in the
reception range for transmissions of said receiving station perform the actions of storing
said reservation information locally and defer from medium access during the time
period and on the channel of the future transmission upon overhearing said
acknowledgement message.
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3.   The method of claim 1, wherein said reservation request is transmitted
piggy-back to a data packet in a frame or in another signalling frame.

4.   The method of claim 3, wherein said acknowledgement message is
25   transmitted piggy-back in an acknowledgement frame of said data packet or another
data packet.

5.   The method of claim 1, wherein said reservation request includes information on the priority or priority class of said future transmission, said priority information being used in that - active stations in said reception range of said sending

5   station replace an existing reservation information stored for the respective time period by new reservation information of a most recently received reservation request, if the existing reservation request has a lower priority than the most recently received reservation request; and - the station that has been previously allocated the channel for the respective time period withdraws or delays its future transmission, if the most

10   recently received reservation has a higher priority.

6.   The method of claim 1, wherein said acknowledgement message includes information on the priority or priority class of said future transmission, said priority information being used in that - active stations in said reception range of said receiving

15   station replace an existing reservation information stored for the respective time period by new reservation information of a most recently received reservation request, if the existing reservation request has a lower priority than the most recently received reservation request; and - that station that has been previously allocated the channel for the respective time period withdraws or delays its future transmission, if the most

20   recently received reservation has a higher priority.

7.   The method of claim 1 or 2, wherein several periodic transmissions are signalled by a single reservation request and - a time period derived from reservation information of a reservation request of a first future transmission being interpreted as

25   period also of the following future transmissions, and - stations active in said reception range overhear said reservation request and other stations than said intended receiving station perform the actions of storing said reservation information locally and defer from medium access during all signalled time periods on all respective channels of the future transmissions.

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8.   The method of claim 1, wherein the signalled starting point of said future

transmission is defined relatively to a specific point in time associated with the reservation request message, like e.g. the beginning or end of the sending time or the beginning or end of the time slot of said reservation request, so that no global synchronization of clocks is required.

9.   The method of claim 1, wherein said specific point in time, which serves as reference point for the definition of the starting time of the future transmission, is defined relatively to the beginning of the reservation request message and signalled inside the reservation request message.

10.   The method of claim 2, wherein - the starting point of the future transmission signalled in the acknowledgement message is defined relatively to the beginning or end of the sending time or the beginning or end of the time slot as a time base of said acknowledgement message and - adapting starting point information from said sending station to the time base of said acknowledgement message.

11.   The method of claim 1, wherein collisions of reservation requests are resolved by a collision resolution mechanism.

12.   The method of claim 1, wherein a reservation request of shorter duration of transmission replaces an existing reservation of longer duration of transmission.

13.   The method of claim 1, wherein reservation information of a most recent reservation request replaces an existing reservation if the most recent reservation request has an earlier due time than the existing information.

14.   The method of claim 1, wherein - said sending station transmits a revocation message to said intended receiving station for the purpose of deleting one or several of its reservation requests; and - stations active in the reception range for transmissions of said sending station overhear said revocation message and other stations than said intended receiving station locally delete the corresponding reservation

information.

15.   The method of claim 1, wherein - said intended receiving station acknowledges said revocation message by returning a message repeating said revocation

5   information; and - other stations than the intended receiving station active in the reception range for transmissions of said receiving station perform the actions of locally deleting the reservation information corresponding to the revocation information.

16.   The method of claim 1, wherein - a station broadcasts a copy of its

10   locally stored reservation information; and - stations active in the reception range for transmissions of said station compare the received reservation information with their locally stored information and add missing reservations to their locally stored reservation information.

15   17.   A communications network consisting of a plurality of stations, including - a sending station which transmits a reservation request for a future transmission to an intended receiving station, said intended receiving station being in a reception range of said sending station, said reservation request signalling reservation information including starting point and duration of the transmission, defining a time period of said

20   future transmission, and, in case of a multi-channel system, frequency or code of the channel of said future transmission, so establishing a reservation, and - stations active in said reception range which overhear said reservation request, wherein other stations than said intended receiving station perform the actions of storing said reservation information locally and defer from medium access during the time period and on the

25   channel of the future transmission.

18.   The communications network of claim 17, characterized in that - said intended receiving station acknowledges said reservation request by returning a message repeating said reservation information; and - other stations than the intended receiving

30   station active in the reception range for transmissions of said receiving station perform the actions of storing said reservation information locally and defer from medium access during the time period and on the channel of the future transmission upon overhearing

said acknowledgement message.

19.   The communications network of claim 17, characterized in that said reservation request includes information on the priority or priority class of said future

5   transmission, said priority information being used in that - active stations in said reception range of said sending station replace an existing reservation information stored for the respective time period by new reservation information of a most recently received reservation request, if the existing reservation request has a lower priority than the most recently received reservation request; and - the station that has been

10   previously allocated the channel for the respective time period withdraws or delays its future transmission, if the most recently received reservation has a higher priority.

20.   The communications network of claim 17, characterized in that said
..acknowledgement message includes information on the priority or priority class of said

15   future transmission, said priority information being used in that - active stations in said reception range of said receiving station replace an existing reservation information stored for the respective time period by new reservation information of a most recently received reservation request, if the existing reservation request has a lower priority than the most recently received reservation request; and - that station that has been

20   previously allocated the channel for the respective time period withdraws or delays its future transmission, if the most recently received reservation has a higher priority.

21.   The communications network of claim 17, characterized in that several periodic transmissions are signalled by a single reservation request wherein a time

25   period derived from reservation information of a reservation request of a first future transmission being interpreted as period also of the following future transmissions, and - stations active in said reception range overhear said reservation request and other stations than said intended receiving station perform the actions of storing said reservation information locally and defer from medium access during all signalled time

30   periods on all respective channels of the future transmissions.

22.   The communications network of claim 17, characterized in that - said sending station transmits a revocation message to said receiving station for the purpose of deleting one or several of its reservation requests; and - stations active in the reception range for transmissions of said sending station overhear said revocation message and other stations than said intended receiving station locally delete the corresponding reservation information.

23   The communications network of claim17, characterized in that - said intended receiving station acknowledges said revocation message by returning a message repeating said revocation information; and - other stations than the intended receiving station active in the reception range for transmissions of said receiving station perform the actions of locally deleting the reservation information corresponding to the revocation information.

24.   The communications network of claim17, characterized in that - a station broadcasts a copy of its locally stored reservation information; and - stations active in the reception range for transmissions of said station compare the received reservation information with their locally stored information and add missing reservations to their locally stored reservation information.

25.   A station which transmits a reservation request for a future transmission to an intended receiving station, said reservation request signalling reservation information including starting point and duration of the transmission, defining a time period of said future transmission, and, in case of a multi-channel system, frequency or code of the channel of said future transmission, so establishing a reservation.